

**UPAP0008-100
PATENT**

**SERIAL NO.: 09/486,625
FILED: September 13, 2000**

REMARKS

Status of the Claims

Claims 3-5, 7-11 and 18-34 are pending in the application.

Claims 21, 24, 28 and 32 have been withdrawn from consideration.

Claims 5, 20, 23, 26, 27, 30, 31 and 34 are allowed.

Claims 3, 4, 7-11, 18, 19, 22, 25, 29 and 33 are rejected.

Claims 4, 5, 9, 11, 19, 20, 22, 23, 25-27, 29-31, 33 and 34 are objected to.

By way of this amendment, claims 21, 24, 28 and 32 have been canceled and claims 3, 18, 22, 23, 33 and 34 have been amended.

Upon entry of this amendment, claims 3-5, 7-11, 18-20, 22, 23, 25-27, 29-31, 33 and 34 will be pending.

Summary of the Amendment

Claims 21, 24, 28 and 32 have been canceled as being directed to non-elected subject matter. Applicants reserve the right to pursue patent protection for such subject matter in a divisional application.

Claims 3, 18, 22, 23, 33 and 34 have been amended to refer to vif protein in proper format.

No new matter has been added.

Initial Remarks

Applicants note the change in Examiner and have amended their records accordingly.

Applicants note that the prior official action has been vacated and the non-final status of the current action.

Applicants note that Examiner Stucker attempted to contact Applicants' undersigned representative who apologizes for his failure to reach the Examiner. Applicants' undersigned representative telephoned the Examiner in response to a message from the Examiner. There appears to have been error and confusion in connection with the subsequent message.

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Claim Objections

Claims 4, 5, 9, 11, 19, 20, 22, 23, 25-27, 29-31, 33 and 34 have been objected to. It is asserted that claims 4, 9, 11, 19, 22, 25, 29 and 33 are substantial duplicates of claims 5, 20, 23, 26, 27, 30, 31 and 34. It appears to be asserted that claims directed to protein variants are asserted to be substantial duplicates to claims to nucleic acid sequences. If Applicants' understanding is incorrect, further clarification of the nature of the objection is required and requested. If Applicants' understanding is correct, Applicants urge the objection is without merit.

Claims 4, 9, 11, 19, 22, 25, 29 and 33 refer to nucleic acid molecules which encode specifically recited amino acid sequences. Claims 5, 20, 23, 26, 27, 30, 31 and 34 refer to nucleic acid molecules with specifically recited nucleic acid sequences. Due to the degeneracy of the genetic code, a large number of different nucleic acid sequences can encode the specifically recited amino acid sequences set forth in claims 4, 9, 11, 19, 22, 25, 29 and 33. Among these are the nucleic acid sequences specifically recited in claim 5, 20, 23, 26, 27, 30, 31 and 34. However, the nucleic acid sequences specifically recited in claim 5, 20, 23, 26, 27, 30, 31 and 34 are but a subset of the different nucleic acid sequences can encode the specifically recited amino acid sequences set forth in claims 4, 9, 11, 19, 22, 25, 29 and 33. The subject matter of the claims is not identical: claims 4, 9, 11, 19, 22, 25, 29 and 33 refer to any of the nucleic acid molecules which encode the specifically recited amino acid sequences; claims 5, 20, 23, 26, 27, 30, 31 and 34 refer to specific nucleic acid sequences.

Applicants respectfully request the objection to claims 4, 5, 9, 11, 19, 20, 22, 23, 25-27, 29-31, 33 and 34 be withdrawn.

An objection to the claims has been made for reference to the vif protein using the italicized letters "vif." Claims 3, 18, 22, 23, 33 and 34 have been amended to refer to vif protein in proper format. Applicants respectfully request the objection to the claims be withdrawn.

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Rejection under 35 U.S.C. §112, second paragraph

It is asserted that the use of the term "attenuated" in claims 22, 23, 33 and 34 renders the claims indefinite because the ordinary meaning asserted by the Examiner is deemed inappropriate. Applicants respectfully refer to page 10, lines 15-17 of the specification which states: As used herein, the term "attenuated, non-functional *vif* protein is meant to refer to *vif* proteins that have no or reduced virion infectivity function compared to wild-type *vif*." Applicants respectfully assert that in view of the specification, the use of the term "attenuated" in claims 22, 23, 33 and 34 is clear and definite. Claims 22, 23, 33 and 34 are clear and definite and in compliance with the second paragraph of section 112. Applicants respectfully request the rejection under 35 U.S.C. §112, second paragraph be withdrawn.

Rejections under 35 U.S.C. §112, first paragraph

Claims 3, 7, 8 and 18 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. It is asserted that applicants reference to nucleic acid molecules encoding mutated *vif* protein with an Arginine in place of the Proline at position 162 of SEQ ID NO:1 is not supported by the specification and therefore new matter. Applicants respectfully disagree.

SEQ ID NO:1 is the *vif* protein consensus sequence referred to on page 7 line 17 and set forth in Figure 1. Figure 1 also shows three *vif* mutation sequences having Arginine in place of the Proline at position 162 of *vif* protein consensus sequence (N24, N26 and N13). The specification clearly support the subject matter of claims 3, 7, 8 and 18.

Claims 3, 7, 8 and 18 are in compliance with the requirements of 35 U.S.C. §112, first paragraph. Applicants respectfully request the rejection of claims 3, 7, 8 and 18 under 35 U.S.C. §112, first paragraph, be withdrawn.

Claims 22, 33 and 34 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. It is asserted that the subject matter of claims 22, 33 and 34 refer to nucleic acid molecules that encode proteins with specifically referenced amino acid sequences but that the only discloses a limited and insufficient number of such nucleic acid sequences.

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First, if the rejection initially refers to claim 34 but in explaining the basis of the rejection, no further reference is made to claim 34. In view of the explanation provided for the rejection, it appears that the rejection was not intended to be applied to claim 34.

With respect to the rejection of claims 22 and 33, it is asserted that Applicants have "not disclosed a sufficient number of species of all of the nucleic acids comprising nucleotide sequences that encode SEQ ID NO: 4, 9, and 10." Thus it is asserted that there is no indication that Applicants were "in possession of all nucleic acid molecules that encode SEQ ID NO: 4, 9, and 10." Applicants respectfully disagree.

The claims as originally filed expressly reflect the subject matter claimed in claims 22, 33 and 34 fully and completely. The degeneracy of the nucleic acid code is both predictable and well known. The specification and claims as originally filed demonstrate that the Applicants were in possession of the invention as defined by claims 22 and 33 at the time the application was filed. Those skilled in the art, fully aware of the degeneracy of the nucleic acid code, would immediately recognize Applicants' possession of the claimed invention at the time the application was filed. The rejection of claims 22, 33 and 34 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement is without merit. At the time the application was filed, one skilled in the art would readily recognize that applicants were in possession of the subject matter of claims 22, 33 and 34.

Claims 22, 33 and 34 are in compliance with the requirements of 35 U.S.C. §112, first paragraph. Applicants respectfully request the rejection of claims 22, 33 and 34 under 35 U.S.C. §112, first paragraph, be withdrawn.

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Conclusion

Claims 3-5, 7-11, 18-20, 22, 23, 25-27, 29-31, 33 and 34 are in condition for allowance. The examination of these claims and passage to allowance are respectfully requested. An early Notice of Allowance is therefore earnestly solicited. Applicant invites the Examiner to contact the undersigned at 215.665.5592 to clarify any unresolved issues raised by this response.

As indicated on the transmittal accompanying this response, the Commissioner is hereby authorized to charge any debit or credit any overpayment to Deposit Account No. 50-1275.

Respectfully submitted,



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